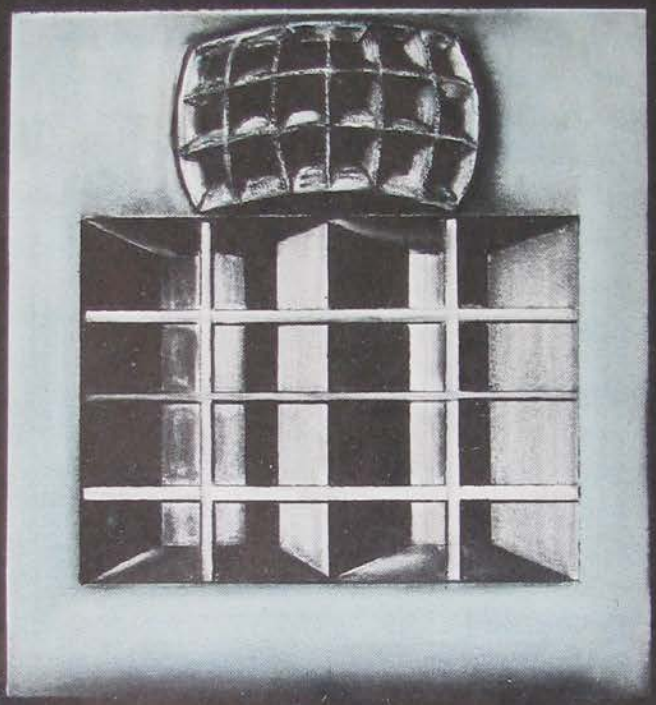
FOR

# THEATER AND *home*



## TRU SONIC

## *Coaxial* AND SEPARATE 2-WAY SPEAKER SYSTEMS



Stephens Manufacturing Co. CIRCULAR 109
10416 National Blvd. — Los Angeles 34, Cal.

# STEPHENS MANUFACTURING COMPANY FIRSTS

## FIRST COAXIAL SPEAKER UNIT

First to design, manufacture, and sell Multicellular Coaxial 2-Way Speakers. The first Coaxial Unit is one of twelve TRU-SONIC 2-Way Speakers which have been in continuous round the clock operation at Lockheed Air-Terminal, Burbank, California, for seven years. These speakers have required not one penny's worth of servicing.

## FIRST SOUND MERCHANDISING POLICY ON HIGH FIDELITY SPEAKER EQUIPMENT

First to produce Coaxial Speakers and related High Fidelity Units on a sound economic production-line basis, allowing precision manufacture of the highest quality at the lowest prices. This permits sales to the ultimate consumer thru normal channels of distribution with equitable profits. First on a national, and now on an international basis, the purchaser is assured of TRU-SONIC service and attention thru accredited representatives, distributors and dealers in quality sound equipment all over the world.

## FIRST WITH THE SILVER SPIRAL DIFFERENTIAL DIFFUSER

First with the *differential diffuser*: a revolutionary new method of dispersing high-frequency tones thru an acoustic-coupler called the SILVER SPIRAL. This device is employed on the unique Model P-52FR CO-SPIRAL Unit.

## FIRST IN COMMERCIAL 2-WAY THEATER SYSTEM ENGINEERING

At the Sound Department of Metro-Goldwyn-Mayer Studios, engineers of this company collaborated in the design and construction of the first 2-Way Shearer Speaker-System. These same 2-Way Systems are still in use in such famous houses as the Capitol Theater in New York and the Graumans Chinese and Carthay Circle Theaters in Los Angeles.

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# Foreword—

## The Reason for Coaxial and Separate 2-Way Speaker Systems

Ordinary speakers present a compromise in design. The single diaphram commonly used must attempt to faithfully reproduce a tone range of approximately 8 octaves—30 to 16,000 pulses per second.

This means that the voice coil attached to the single cone must try to move in and out thru the dense flux area of the pole piece as far as ⅜ of an inch on low tones. It must also attempt to vibrate very rapidly over short distances on high notes. To efficiently convert bass pulses to acoustic energy the diaphram should be large. In order to vibrate rapidly and generate treble tones easily it should be small.

THEREFORE—TRU-SONIC speaker systems utilize 2 driving units—one unit large in size designed for maximum efficiency within the range of the first ½ of the audible spectrum, and another unit small in size, built with the microscopic accuracy of a fine watch. This mechanism generates the rapid delicate pulses of the remaining tone range.

IN ADDITION—it should be noted that bass tones are easily heard throughout the listening area. They act like the waves at the seashore, spreading around intervening objects and flowing out to the listeners on a broad angle. High tones speed like a bullet from a gun in a single direction straight from the axis of the speaker. For this reason TRU-SONIC 2-Way speaker systems provide a nest of cellular horns as a complement of the high frequency unit. There are 8 to 18 of these horns, all pointed in slightly different directions. In this manner the higher frequencies are spread through a wide horizontal angle and a smaller vertical angle, completely covering the listening area.

STEPHENS MANUFACTURING CO.

10416 NATIONAL BOULEVARD
LOS ANGELES 34, CALIF.

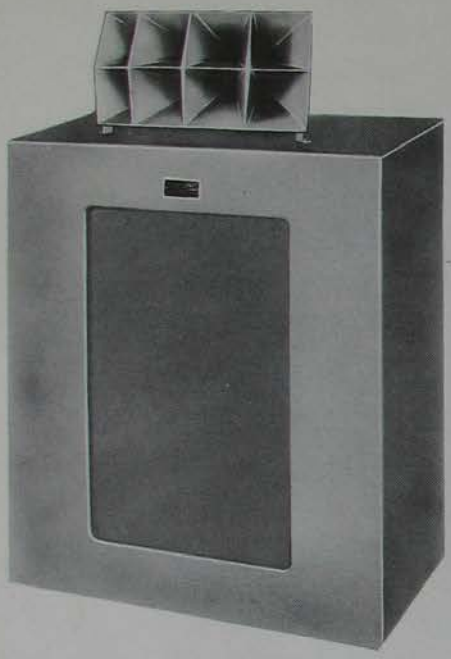
# PRESENTING TRU-SONIC COAXIAL AND SEPARATE 2-WAY SYSTEMS

## *LIVING, VIBRANT REALISM*

Music with the full deep resonance of the tympany and tinkling clash of cymbals, speech and singing with complete articulation and sibilance, reach the listener in perfect balance and proportion. The breath-taking realism promoted by the quality known as "room presence" is obtained to the fullest in TRU-SONIC Speaker Systems. This is due to superlative skill in design and precision of manufacture.

## *CABINETS*

TRU-SONIC speakers are available in superb cabinets, distinctively modern, and designed to harmonize with quality furnishings. Rare woods finished by master craftsmen tastefully house these fine reproducers in any locale. Utility cabinets can be ordered also. The model 52SD shown on the right is available in mahogany and bleached blonde.



● **Model P-52HF Separate 2-Way System housed in utility cabinet.....$320**
★ **Available in Electro-Dynamic Type E-52HF.....$295**
**Specifications on Page 8**

## THE P-52A COAXIAL SPEAKER

The Stephens Manufacturing Company proudly presents its new Series P-52A TRU-SONIC Coaxial Speakers. Combined in a single assembly are a Low-Frequency unit of the cone type, a High-Frequency of the multicellular type and the Dividing-Network. By means of this Dividing-Network, or electrical crossover, the large cone, specially designed for efficient bass response, receives the lower portion of the audible spectrum. The High-Frequency reproducer receives the energy carrying the treble tones and distributes them throughout the entire listening area without loss of level. A unique feature is the unusual design, which permits the use of 8 cellular horns in a compact assembly. This provides the widest angle high-frequency distribution available in a reproducer of this size. These factors, and others, make the TRU-SONIC Coaxial Speaker the ideal for AM and FM reception, broadcast station monitoring and sound-motion-picture reproduction.



● **Model 52SD Period Cabinet.....$180**
★ **With the P-52A Coaxial Unit.....$385**
★★ **With the P-52HF Separate 2-Way Components (Totally Enclosed).....$440**

## THE P-52HF SEPARATE 2-WAY SYSTEM

In order to provide a deluxe presentation for the most discriminating audience, engineers of the Stephens Manufacturing Company have designed the TRU-SONIC Separate 2-Way Speaker System. Space requirements are greater than for the TRU-SONIC Coaxial unit, for in order to extend the tone range and permit the ultimate in realism, larger physical proportions are necessary.



● **Model P-52A Tru-Sonic Coaxial Speaker.....$205**
★ **Available in Electro-Dynamic Type E-52A.....$175**
**Specifications on Page 6**

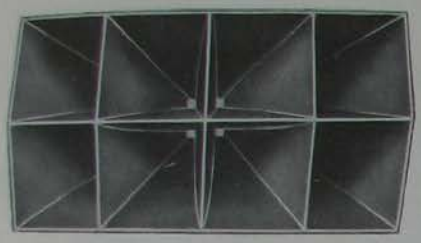
## *BASS REPRODUCTION*

*The impact of the bass drum requires the moving of tremendous volumes of air by the speaker diaphram. The re-creation of the bass viol's sonorous tone demands large reinforced displacements of the transmitting medium. Accordingly, the powerful low-frequency unit with specially designed cone of large compliance is matched with the TRU-SONIC Bass-Reflex cabinet. This is the most efficient space-saving speaker housing known. Construction is of heavy, rigid, vibration-proof plywood. The interior is lined with moisture-resistant absorption material to eliminate spurious resonance. A carefully designed release-port beneath the cone relieves back-pressure and reinforces the frontal wave.*

# FEATURES OF THE P-52A COAXIAL SPEAKER

### *TEMPERATURE-RESISTANT VARNISH*

Both voice-coils are impregnated with temperature-resistant varnish, greatly increasing the efficiency and strength of the units.



● 8 Cell Horn

## MULTICELLULAR HORNS

True, broad-angle High-Frequency dispersion is achieved through the use of 8 *individual cellular horns.* The use of 8 horns is an exclusive TRU-SONIC Coaxial feature. Distribution of high-frequencies takes place through an 80° *horizontal angle* and a 40° *verticle angle.*



● Cast Machined Frame

## CAST FRAME

A heavy 15" cast machined frame permanently aligns the cone and voice coil assembly, and also forms a mount for the Dividing-Network.



● Model 52S Field Supply.....$18

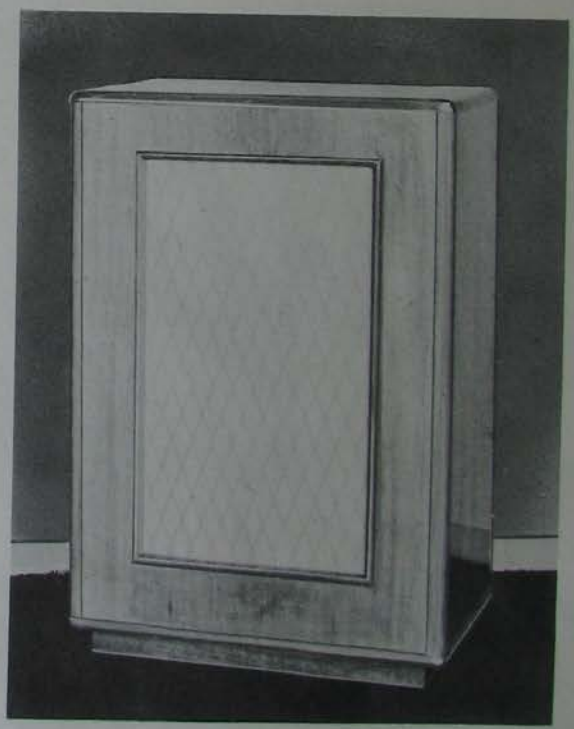
## FIELD SUPPLIES

Field current for the TRU-SONIC Coaxial electro-dynamic models can be furnished through the Model 52S Field Supply Unit. Because TRU-SONIC Coaxial speakers are used so frequently near high-quality low-level circuits, no hum-inducing iron-core coils of any kind are employed in the design.



● Model 52D Deluxe Cabinet.....$130

★ With the P-52A Coaxial Speaker.....$335



● Model 52D Deluxe Cabinet (Bleached Blonde).....$130

### *HIGH INTELLIGIBILITY*

*The greatest efficiency possible—high transfer ratio of electric to acoustic energy—and the ability of TRU-SONIC Speakers to reproduce the extremes of the audible spectrum with absolute fidelity, results in comfortable, easy listening at normal room levels.*

# FEATURES OF THE P-52A COAXIAL SPEAKER

### *ALNICO 5 MAGNETS*

**Permanent magnet types of all TRU-SONIC Speakers are made with the superior Alnico 5 magnet material. Alnico 5 attains a strength of over 3½ times that of the next best alloys. Lower operating temperatures are possible with perfect hum-free performance.**



● **Diaphram Assembly .....$8**

## DIAPHRAM ASSEMBLY

The High-Frequency Replaceable Diaphram assembly contains a 1½" voice coil, precision wound with aluminum wire, and allows for both leads to emerge at the proper connecting point without channeling the suspension material. This permits maximum strength without thickening the voice coil; thus, maximum conductor, with minimum weight and no loss of strength, is provided in a dense flux-gap of minimum proportions.



● **Cone**

## CONE

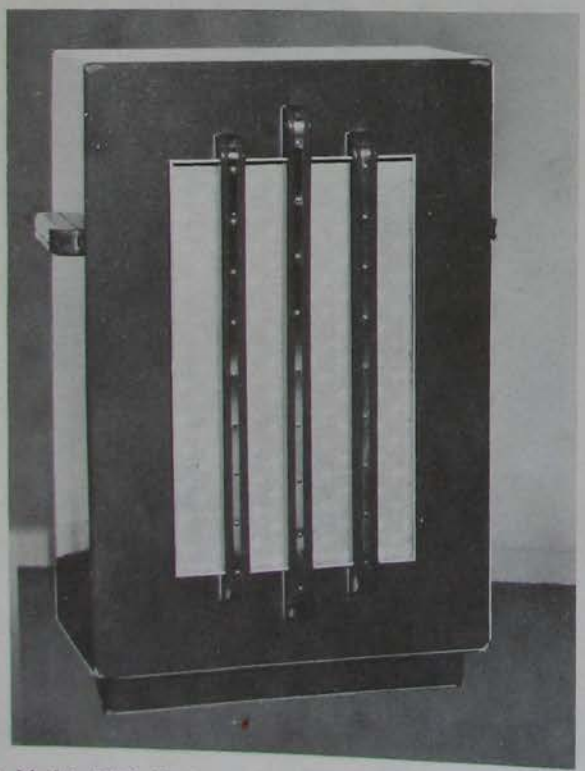
**The highly efficient, moisture resistant, seamless moulded, 15" cone is suspended at 2 points, the outer rim and the inner spider. The compliance of these points is maintained in proper proportion so as to promote ideal piston-like action of the entire diaphram. The effective driving area is approximately 125 sq. inches. A 2" copper wound voice coil forms an integral part of the cone assembly.**



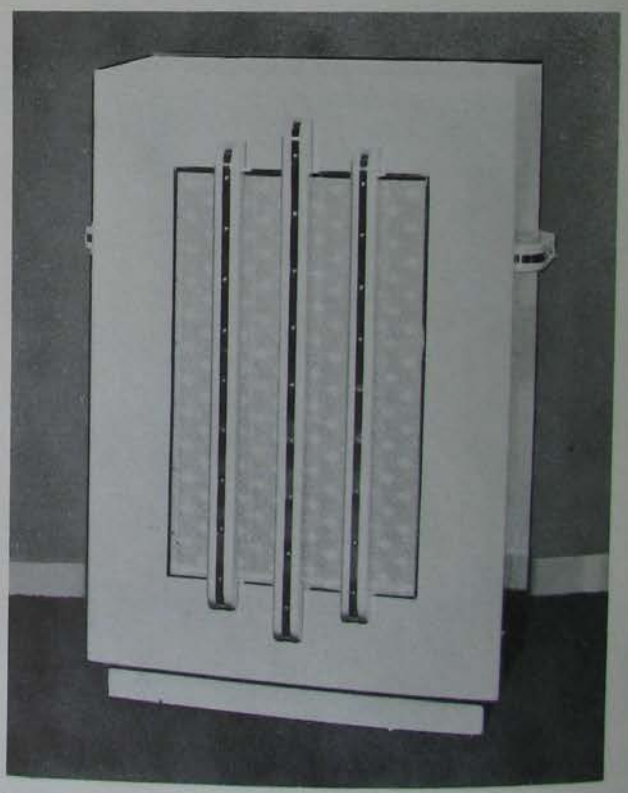
● **Dividing Network**

## DIVIDING-NETWORK

**The dividing-networks consist of m-derived, half-section, constant-impedance circuits with specially wound, high Q, air-core coils. The circuit is complemented with quality condensers and the overall results in units having the low insertion loss of less than ½ db. Distortion with varying frequency and level is minimized thereby.**



● **Model 52M Modern Cabinet available in Mandarin Red, Moonstone Ivory and Ebony Black.....$180**



★ **With P-52A Coaxial Speaker.....$385**
**(Note—the 52M will not house the P-52HF Separate 2-Way System)**

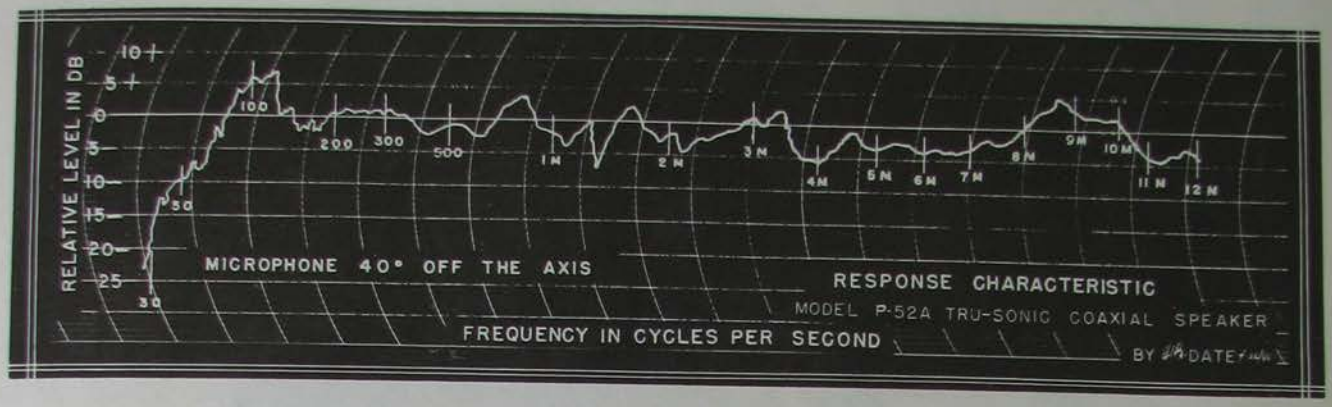
### *ECONOMY*

*Less amplifier power is required to deliver the usual room volume, permitting the use of smaller, less expensive units in the audio components of auxiliary equipment. A complete line of easily replaceable vital assemblies is available in case of breakage through accidents. Diaphragms ,for example, can be replaced without special tools. Centering is accomplished automatically in a concentric recess. Improved manufacturing and engineering processes developed during the war while producing for the government, have resulted in streamlined operation reflecting large savings to the consumer.*

# INFORMATION FOR THE ENGINEER—P-52A COAXIAL UNIT

## RESPONSE CHARACTERISTIC

The attention of the engineer is invited to the machine-run curve reproduced below, attesting to the design excellence of TRU-SONIC Coaxial Units. Measurements off the exact central axis show a slightly increased high end, rather than the usual violent drop common to ordinary speakers. Further attention is invited to the excellent high-frequency response, and the holding up of the low end due, in part, to the superior design of the bass-reflex cabinet. Note, also, the outstanding freedom from crossover disturbance at 1200 cycles. The test unit was picked at random from the production line.




### Electrical Characteristics

(1) Power input: 20 Watts
(2) Cross-over Frequency: 1200 CPS
(3) Horizontal distribution angle: 80
(4) Vertical distribution angle: 40
(5) Field Excitation:
  a) 5.5 lb. copper coil 30 watts
  b) 6 lb. Alnico 5
(6) Field Resistance: 1600 Ohms
(7) Input impedance: 16 Ohms
(8) Frequency response: 30-16000 CPS, ± 5 db-50-12000 CPS
(9) Cone resonance: 55 cycles
(10) Diaphram resonance: 400 cycles

### Physical Characteristics

(1) Overall Diameter: 15½"
(2) Baffle Opening: 13½"
(3) Depth behind mounting Panel: 10"
(4) Net Weight: 30 Pounds
(5) Cabinet Dimensions: 26"wx15"d x34"h

*Licensed under Western Electric Patents*

## *SAFETY AND DEPENDABILITY*

All TRU-SONIC Units are very conservatively rated. Overloads for reasonable periods up to twice the rated power cause no harm to mechanical components. Accurately machined aluminum castings result in units of efficient, durable construction and perfected superiority.



● Model 52P Portable Cabinet.....$ 60
★ With P-52A Coaxial Speaker.....$265

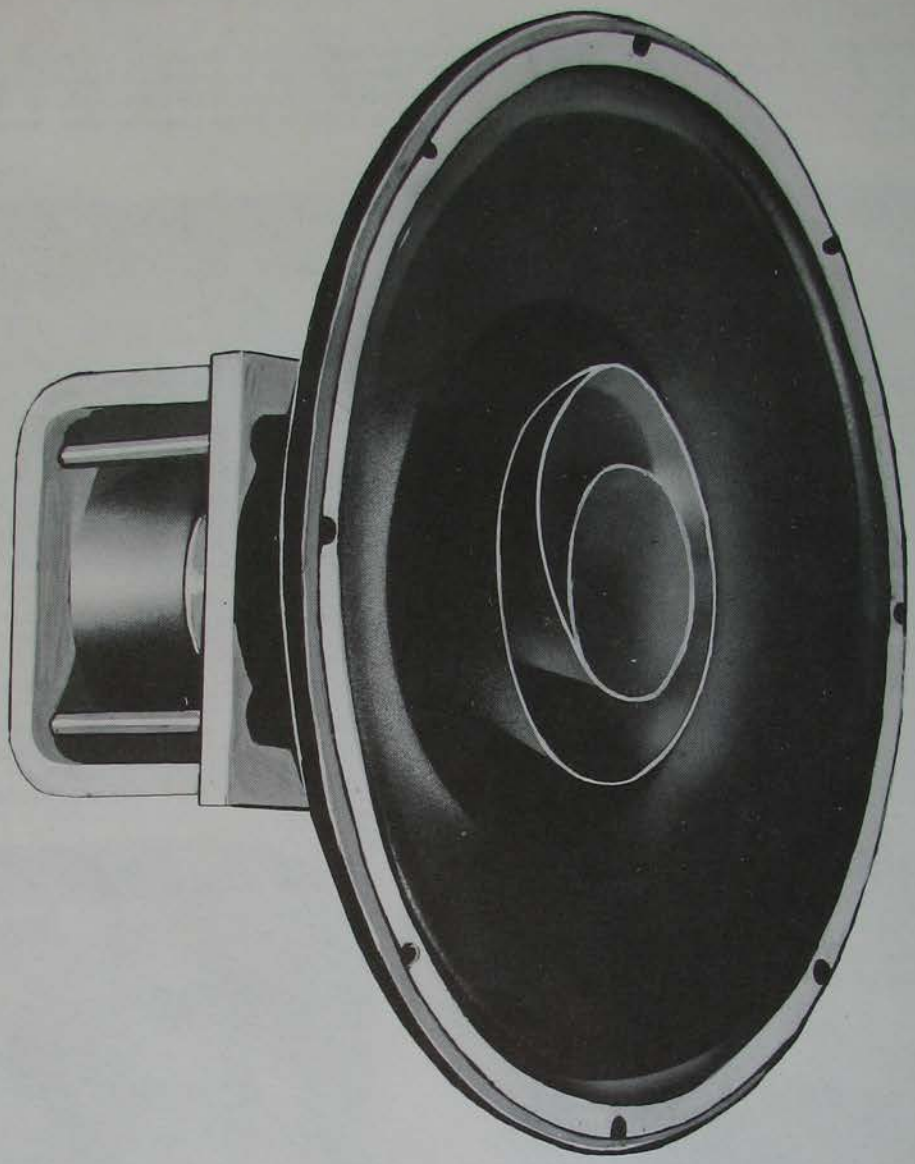


● Model 52U Utility Cabinet.....$ 60
★ With the P-52A Coaxial Speaker.....$265

## *POWER AND EFFICIENCY*

*Reproducing efficiency is many times that from ordinary single-speaker types—actual acoustic power is from three to four times as much. Thus, TRU-SONIC Speaker systems deliver voice and music with a naturalness devoid of the common "pinched" and "squeezed" effect present in most reproducers. Overtones balance with the fundamentals to provide the thrill of natural perception.*

# THE CO-SPIRAL MODEL P-52FR



## • MODEL P-52FR CO-SPIRAL SPEAKER . . . . . $80 List

Emerging from the exhaustive tests of the design laboratory, the revolutionary Co-Spiral** Speaker embraces the same fine construction and performance features of Standard Tru-Sonic units—

**PLUS** *Full* 15 *watts* of power handling capacity. 15" *Seamless* molder curvilinear cone of new design. *Two acoustic sections*, one designed for reproducing lowest bass, and one section for extended high tones. *Reproducing range* is 40 to 14,000 cycles! *Powerful* Alnico 5 Magnet. *Greatest* electro-acoustic transfer efficiency and widest range of *any* speaker utilizing 1 voice coil. 90 *Degrees* of high frequency dispersion.

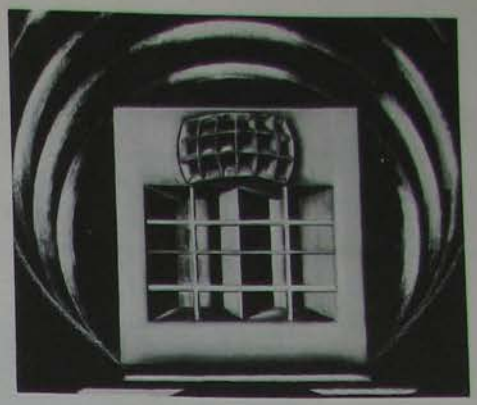
**AND** A brand new method of high frequency propogation by means of the *differential diffuser* called the SILVER SPIRAL*.

**SPECIFICATIONS:**

Power Input: 15 watts
Alnico 5 Magnet: 2½ lbs.
Input Impedance: 16 ohms
Overall Diameter: 15⅛"

Net Weight: 23 lbs.
*Licensed under Western Electric Patents*
**Patents applied for*
***Copyright* 1947, *Stephens Mfg. Co.*

# *Theater Quality* IN THE HOME



## THEATER SOUND AT LOW COST

Aproaching the nadir of acoustic perfection, the particular listener is content with no less than this superb reproducer for his home. Smaller theaters throughout the country have accepted this unit as the standard of excellence where powers in excess of 20 watts are not required.

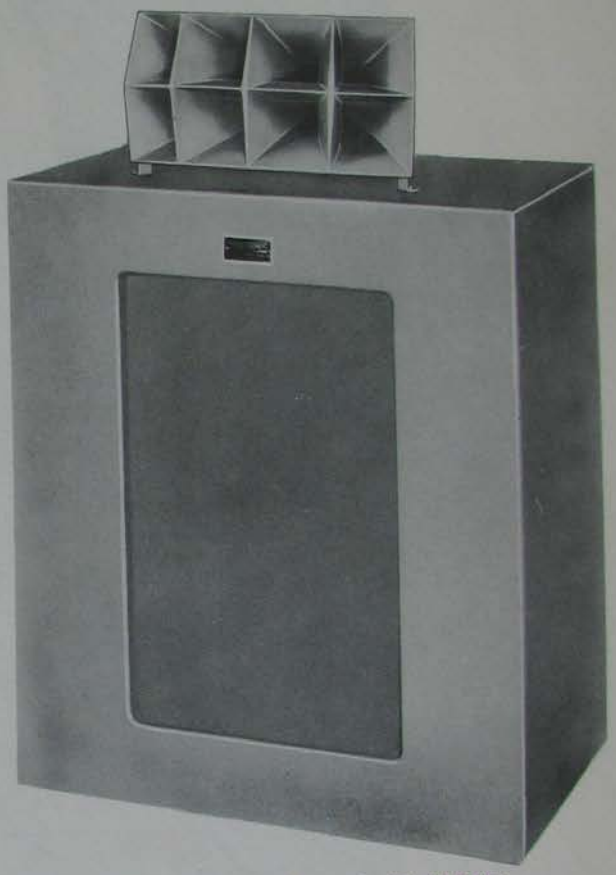
## FEATURES

### • LOW CROSSOVER

Because space is not a major consideration, a low crossover frequency is selected, permitting the use of larger and more efficient high-frequency dispersing horn-cells. Thus a faint whisper is heard throughout the whole listening area. The heavily-powered units properly balance the performance from full deep bass to highest overtones, without emphasizing some frequencies and leaving out others. High-Fidelity finds true meaning in this excellent instrument.

### • 2 FIELD UNITS

To deliver top performance, separate field units are provided for both the high-frequency and low-frequency reproducers.





- **P-52HF Separate 2-Way System in Model 52U Cabinet** ..... **$320**
- ★ **Components without Cabinet** ..... **$245**
- ★★ **P-52HF in Model 52SD Period Cabinet** ..... **$440**
- ★★★ **Available at $25 less in Electro-Dynamic Type E-52HF**

## PHYSICAL CHARACTERISTICS

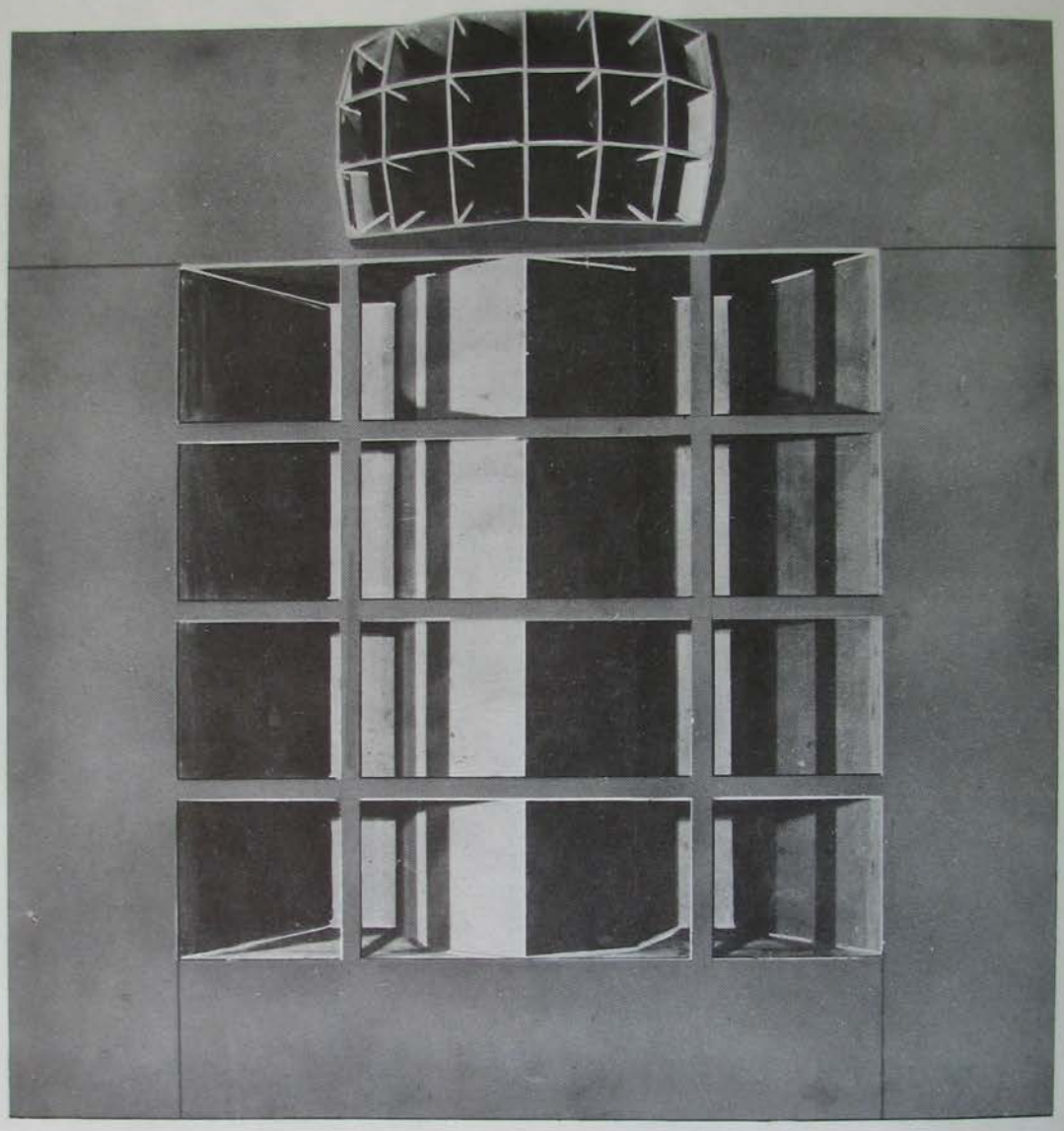
Cabinet Dimensions as illustrated above: 26″ wide by 15″ deep by 34″ high. Overall height: 43″
Net Weight: 90 pounds. Shipping Weight: 130 pounds
*Licensed under Western Electric Patents*

## ELECTRICAL CHARACTERISTICS

(1) Power input: 20 watts
(2) Crossover frequency: 800 cycles
(3) Horizontal distribution angle: 80°
(4) Vertical distribution angle: 40°
(5) Number of high-frequency cells: 8
(6) Combined field excitation: 35 watts. *Electro-dynamic type*
(7) Combined field weights, Alnico 5: 6 lbs. *P.M. Type*
(8) Input impedance: 16 ohms
(9) Cone resonance: 55 cycles
(10) Diaphram resonance: 400 cycles
(11) Frequency response: 30-16000 CPS ± 5 db: 40-12000 CPS
(12) High Frequency Unit: } Specifications on
(13) Low Frequency Unit: } succeeding pages
(14) Multicellular Horn:

- **Model 52SD Period Cabinet (Bleached Blonde)** ..... **$180**
  **Available in Mahogany also—See Page 2**
- ★ **With the P-52HF Separate 2-Way Components (Totally Enclosed)** ..... **$440**

# TRU-SONIC THEATER SOUND



**Model 404W-426HX Tru-Sonic Theater Sound System $1170 net★**

**● For Theaters up to 3500 seats**

★ *Tru-Sonic Theatre Sound is available to the ultimate consumer at prices shown through distributors of quality sound equipment everywhere.*

Four model P-52L 20 Watt Low Frequency units are coupled with two model P-40 High Frequency units in combination with the model 436H double-throated 400 cycle horn. Full 100% utilization of the frequency range even greater than that supplied by the best recorded film sound-track is a dominant feature of its perfected engineering. Critical high frequency dispersion takes place through the large angles of 60 *and* 120 *degrees.* Net weight: 513 lbs.; dimensions: 11'hx9'wx34"d.

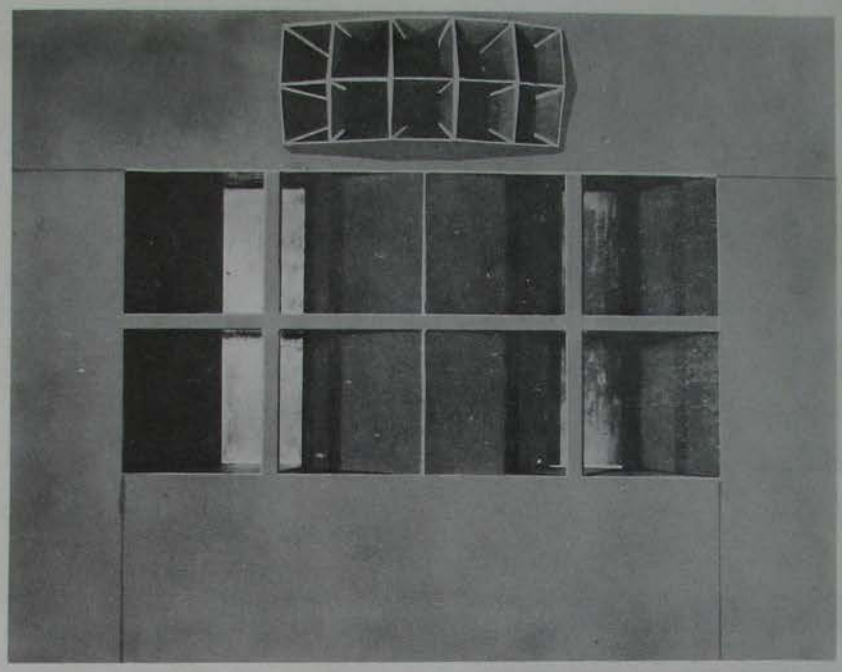
## FEATURES OF TRU-SONIC THEATER SOUND

● COMBINED EXPONENTIAL AND BESSEL FLARE IN THE HIGH FREQUENCY HORNS, resulting in greater efficiency with less distortion.

● LOW 400 CYCLE CROSSOVER. Distortion of a disagreeable nature is the result of loading a cone reproducer with high frequencies. It has been incontrovertably proved that cone breakup starts at 600 cycles. Insurance of perfect reproduction, therefore, is obtained through the use of the lowest crossover possible, 400 *cycles.*

● FOLDED LOW FREQUENCY EXPONENTIAL HORN. Because an exponential low frequency horn of the straight type would call for a cabinet of such depth as to be unwieldy and costly of space, Tru-Sonic Exponential Bass Horns are folded, resulting in a *true exponential* horn only 34 inches deep. This actually permits 2 additional rows of seats in the theater with no sound quality impairment.

# TRU-SONIC THEATER SOUND



**Model 402W-425HX Tru-Sonic Theater Sound System $726 net★**
**★ For Theaters up to 1750 seats**

★ *Tru-Sonic Theatre Sound is available to the ultimate consumer at prices shown through distributors of quality sound equipment everywhere.*

Employs 2 Model P-52L Low Frequency Units in combination with 1 Model P-40 High Frenquency Unit. Utilizes the 425H 400 cycle, 2x5 horn for HF beam dispersion. Advanced design provides a greater range than that currently available from a recorded film sound track. Net Weight: 390 lbs. Dimensions: 9'hx9'wx34"d.



**Type P-40 HF Unit $200 List**
**40 Watt PM**

**Range: 350-16000 Cycles**

## TRU-SONIC HIGH-FREQUENCY UNITS MAKE SOUND-REPRODUCTION HISTORY

As generators of acoustic power in the upper end of the audible spectrum, the TRU-SONIC High-Frequency units present the perfect blend of sound-engineering design and listener preference. Acoustic rsponse, in combination with L-F units, has been adjusted to levels picked as being most pleasing to a large majority of selected listeners. *Actual listening tests on scores of representative groups of living people* have dictated the design of the acoustic proportions in the critical compression chamber.



**Type P-15 HF Unit $70 List**
**20 Watt PM**

**Range: 500-16000 Cycles**

### • DIAPHRAM

Perhaps the most important feature is the engineering of the diaphragm construction; 2 mil duralumin is employed for strength, shaping is done by the superior spinning method, and strong, yet highly compliant annular rings form the suspension. Lower harmonic distortion thru linear motion is a direct result of the annular type of compliance.

### • COMPRESSION CHAMBER

Compression chamber construction has been designed for optimum operating proportions. Throat size is large enough to prevent undue friction by the passage of air, and sufficiently small to present the highest acoustic-loading possible. This feature results in the high electro-acoustic conversion efficiency of over 50 percent.

### • VOICE-COIL

The choice of aluminum wire for the voice-coil is dictated by the light weight of this medium, allowing for more efficiency and minimum air-gap in the dense flux-area. The lower mass of the aluminum and the use of special heat-resistant featherweight varnish, hold the non-linear disturbance of the compressed air in the generating chamber to a minimum.

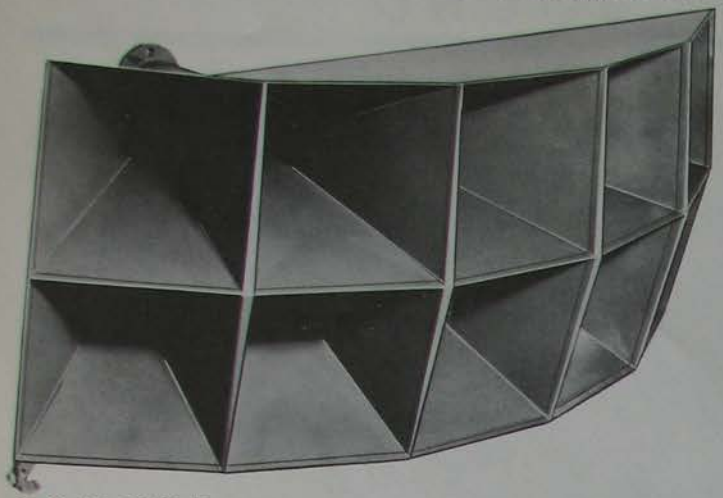
### • MAINTENANCE

Maintenance is rarely required except for repairs occasioned by accident and breakage. Diaphrams are readily replaced by unskilled personnel without the use of special tools. Concentric recesses cause automatic centering of the voice-coil.

# TRU-SONIC HIGH-FREQUENCY CELLULAR HORNS

## FOR THEATERS — SERIES 400

The 2x5 configuration is standard for most theater applications.



- **Model 425H Horn**.....**$200 List**
  400 *cycle, 2x5 configuration, 40x100 degree dispersion.*
- **Model 436H Horn and Y Throat**.....**$340 List**
  400 *cycle, 3x6 configuration, 60x120 degree dispersion. For larger theaters.*

*Size of each 400 cycle cell, 8"x8"x29"; intercepts 20 degree solid angle.*

## FOR SMALL THEATERS AND HOME — SERIES 800

Standard 800 cycle units provide 80° horizontal distribution and 40° vertical distribution. This is the ideal for the vast majority of usual applications; 8 cells (2x4).



- **Model 824H Horn**.....**$50 List**
  800 *cycle, 2x4 configuration, 40x80 degree dispersion.*
- **Model 826H Horn**.....**$75 List**
  800 *cycle, 2x6 configuration, 40x120 degree dispersion.*

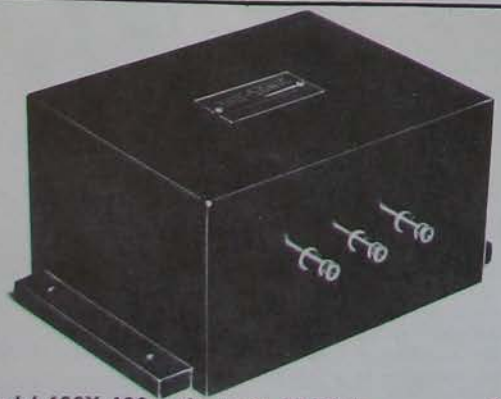
*Size of each 800 cycle cell, 4"x4"x11"; intercepts 20 degree solid angle.*

# AN ACHIEVEMENT IN DESIGN

The Bass tones from a low-frequency reproducer are easily heard throughout the listening area. They act like waves at the seashore, spread around intervening objects, and flow out evenly to the listener on a broad angle. High tones from an H-F unit, speed like a bullet from a gun in a single direction, straight from the axis of the generator. In order for the listener who is off the axis to receive his balanced proportion of high to low tones, the high-frequency beam must be properly deflected. This is accomplished in TRU-SONIC standard H-F Horns by utilizing multiple cells nested together so as to provide coverage through a large horizontal angle and a smaller vertical angle. The normal listening area is entirely served in this manner with high-frequencies.

The high pressures generated in the compression chamber and throaot of an H-F unit must be coupled to the outside air which offers a low impedance. Also, the small diaphragm must cause a large volume of air to be set in motion. This is achieved by proper loading applied through well engineered horns. The curve of the cells of the TRU-SONIC multicellar horns follow an exponential function for three fourths of their length, preventing reflections, or back-pressures, into the throat. A condition of this kind would result in loss of efficiency. The curve of the remaining fourth attains a Bessel function. This last produces a greater rate of expansion near the mouth of the horn, permitting the emergent wave-shape to be more nearly spherical. The spherical wave-shape presents a minimum of discontinuity with the outside air. In addition, the shorter radius of curvature of this wave, due to the larger opening resulting from the Bessel function, produces a negligible number of transverse or standing waves. The latter cause distortion of a disagreeable nature.

# TRU-SONIC LOW-LOSS CROSSOVERS



- **Model 400X 400 cycle, up to 80 Watts**.....**$95 List**

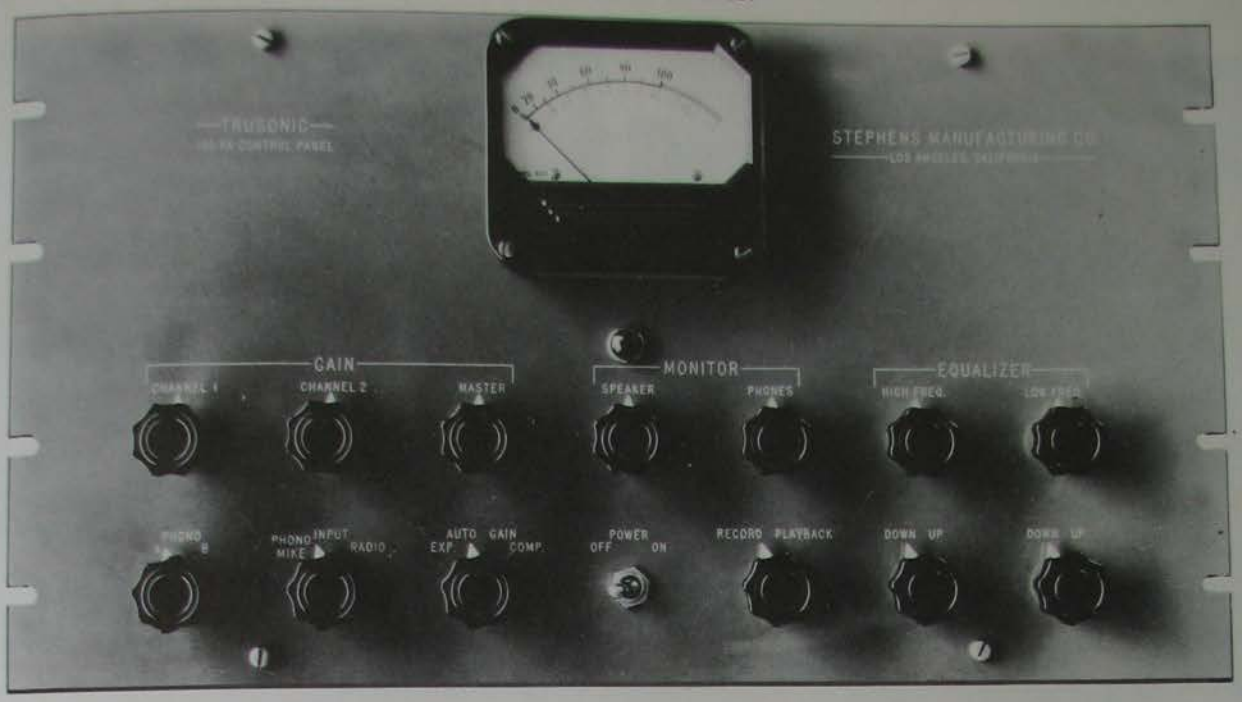


- **Model 800X 800 cycle, up to 40 watts**.....**$45 List**

Enclosed in non-metallic containers to eliminate distortion with varying frequency, the design of these crossovers allows 12 db attenuation per octave, the standard in universal practice. Attenuation is 3 db at crossover frequency; phase rotation is 270 degrees. Low insertion loss through perfected construction is ½ db.

# 100 PX CONTROL PANEL & AMPLIFIER

**(30 or 50 Watts)**




**PX Control Panel and 100A30X amplifier complete** ..... **$787.50 List**
**PX Control Panel and 100A50X amplifier complete** ..... **$887.50 List**
*duct $57.50 if no rack cabinet is required.*
*en ordering specify impedances, type of cutting head and pickup to be employed.*

The STEPHENS MANUFACTURING COMPANY takes pleasure in presenting the complete answer to the needs of the record-record-studio, industrial public address and play-back, and the deluxe home-recording installation. The 100 PX Control Panel is a companion designed to be employed with the standard TRU-SONIC 30 watt or 50 watt line amplifier after certain modifications have been made ccommodate cabling between the two units. Unit will accommodate two recording tables, two play-back tables, one low impedance micro-ne, one high impedance microphone, FM or AM Tuner, Monitor Speaker, Monitor Head Phones, and high fidelity play back speaker. eral or all of these units in any combination may be used.

Fully and completely engineered to provide play-back and recording equilization for NAB, Orthoacoustic, and Standard Records. Com-e switching is accomplished by plainly marked controls. By means of this panel it is possible to record microphone and microphone plus rd combined. Provision is made for connecting a high fidelity tuner and proper panel switching is included to permit equalizing and rding. Selection of play back is provided for either automatic phonograph or transcription turn-table, or both. The unit contains a arate preamplifier for the new type low level pickups with complete equalization as recommended by manufacturer. Special compression expansion circuit is provided to facilitate recording without over-cutting, and also for restoring dynamic range of source material orig-lly recorded thru this system or any other. Equalizing circuit consists of two side amplifiers which permit equalizing up or down thru a ge of 25 db both at the low and high ends of the audible spectrum. Manipulation of equalization controls does not affect mid-range level set by master gain control. The volume indicator is the highest quality high-speed Weston. Two monitoring controls are provided for ulating volume on either head phones or monitor speaker without affecting signal going through the channel. All circuits are standard and ploy highest quality precision noiseless resistors. High level mixing is employed throughout for quiet control.

TE: The type 100 PX Control Panel can be used only in conjunction with 100A30X or 100A50X line amplifiers which have special minals provided. Two and one-half foot cable and connecting plug is included for such use.

equency Response: ± ½ db from 30 to 20,000 cycles

m Level: 75 db below full output

istortion: Less than 1% total rms distortion.

eight Mounted: 175 lbs. approx.

ze: 21"x19" rack mounted in cabinet, 20" deep

# TRU-SONIC METAL CABINET—MODEL 100C 15

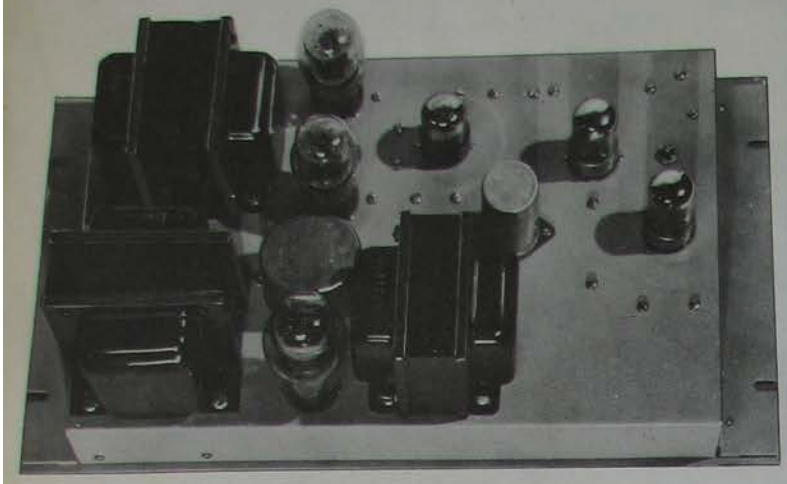
Streamlined styling with vertical front corners rounded. Panels fit into recess so that edges are not exposed. Constructed of 1/16" cold olled steel with joints electrically welded. Louvres provide ample ventilation through sides and back. Piano type hinges are used on doors which are provided with flush snap-type fasteners. Finished in gray ripple or to specifications.

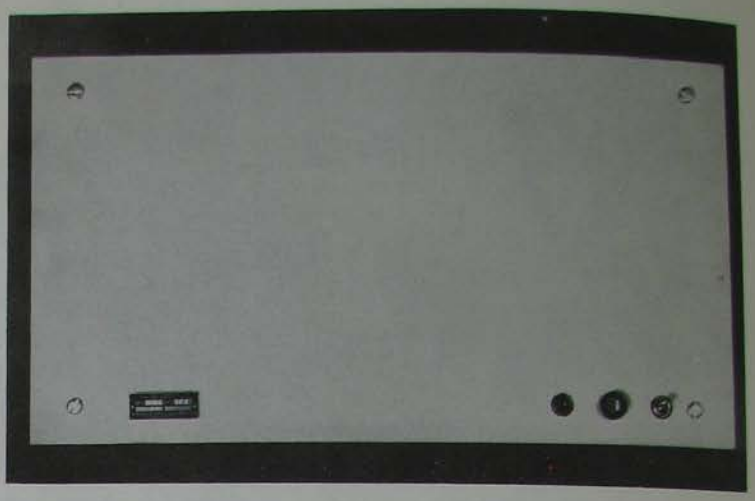
## SPECIFICATION:

Takes standard 10½"x19" 30 Watt or 50 Watt amplifier panel in addition to the standard 10½"x19" 100 PX control panel with comple-ment of mixing controls. Net weight: 40 lbs.

**Model 100C 15 Metal Cabinet** ..... **$57.50**

# TRU-SONIC STANDARD AMPLIFIER TYPE 100A30





Highest quality line amplifier suitable for broadcast-station monitoring, disc and film recording, public address work and motion-picture sound reproduction. Self contained power supply of ample proportions provides smooth hum-free power for up to 6 preamplifiers. Mounted on standard gray 3/16" aluminum 10½"x19" relay rack panel. Has separate internal volume control to limit maximum output.

## SPECIFICATIONS:

Power output: 30 Watts
Input level: .1 volt rms
Input impedance: 100,000 ohms
Output impedance: 8, 16, 125, 250 or 500 ohms

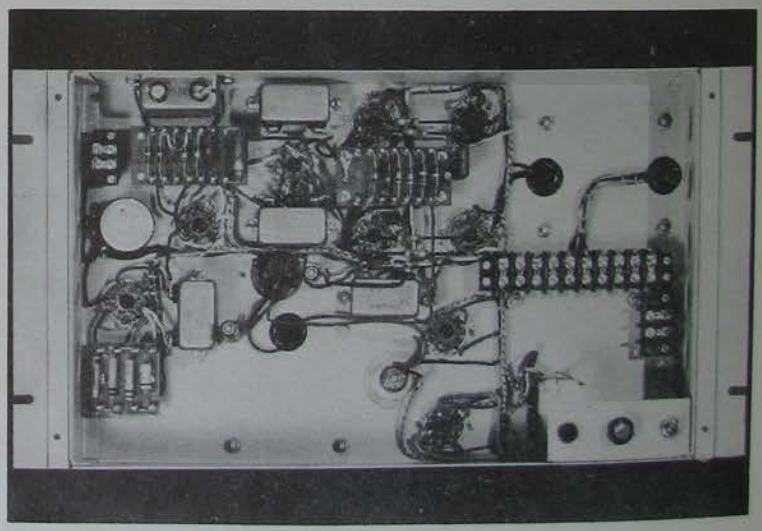
Distortion: Less than 1% rms harmonic distortion.

Hum level: 75 db below rated output
Frequency response: ± ½ db from 30 to 20,000 cycles
Net weight: 37 lbs.

**Type 100A30 Standard Amplifier.....$200 List**

# TRU-SONIC STANDARD AMPLIFIER TYPE 100A50





Same construction as 100 A 30 Tru-Sonic Amplifier and mounts on same panel: 10½"x19". Provides additional power for up to 8 preamplifiers.

## SPECIFICATIONS:

Power output: 50 watts
Input level: .1 volt rms
Input impedance: 100,000 ohms
Output impedance: 8, 16, 125, 250 and 500 ohms

Distortion: Less than 1% rms harmonic distortion.

Hum level: 75 db below rated output level
Frequency response: ± ½ db from 30 to 20,000 cycles
Net weight: 43 lbs.

**Type 100A50 Standard Amplifier.....$300 List**

# TRU-SONIC MODEL P-52L SINGLE SPEAKER

## REALISM FROM A SINGLE UNIT

A new presentation is this powerful 15" speaker with curvilinear designed ,highly efficient, seamless moulded and moisture-resistant cone. Suspension compliance has been carefully calculated to promote ideal piston-like action of the diaphragm. Effective driving area is approximately 125 sq. inches. Voice coil is treated with a refined temperature-resistant varnish, and wound with highly conductive copper wire. Design permits full ½" excursion of cone at 40 cycles.

The exceptionally large 4½ pound Alnico V Magnet allows a flux density of 14000 lines per sq. cm. in a 2" diameter voice coil. This prevents undue transient distortion and "muddy," displeasing bass found in larger diameter voice coils employed with comparable magnet structures.

## ELECTRICAL CHARACTERISTICS

(1) Power Input: 20 Watts
(2) Field Excitation:
  (a) 4 pound copper coil; 20 watts
  (b) 4½ pound Alnico 5 Permanent Magnet
(3) Input Impedance: 16 Ohms
(4) Field Resistance: 1700 Ohms or to specification
(5) Cone Resonance: 55 Cycles

## PHYSICAL CHARACTERISTICS

(1) Overall Diameter: 15⅛"
(2) Baffle Opening: 13½"
(3) Depth behind Mounting Panel: 8½"
(4) Net Weight: 25 Pounds
(5) Mounting Dimensions: RMA Standard

*Licensed under Western Electric Patents*

This unit affords an extremely high transfer ratio of acoustic to electric energy. Combined with a high-frequency unit and multicellular horn in a separate 2-way system, the mechanism serves as a powerful generator of deep fundamental bass tones.



● **Model P-52L Speaker.....$80 List**
★ **Model E-52L Speaker.....$60 List**

# PRICING POLICY

All prices shown in this catalogue are established list prices to the ultimate consumer through authorized dealers with two exceptions, the complete 40 and 80 watt TRU-SONIC THEATER SOUND SYSTEMS shown on pages 9 and 10. Because these units are designed for theaters and other industrial applications, they are available at the reduced net prices indicated from authorized distributors and theater supply houses throughout the United States.

# WARRANTEE

TRU-SONIC products are warranted free from all mechanical and electrical defects for a period of one year from date of purchase. Material should be returned prepaid to the factory, well packed and properly identified, to facilitate immediate repair or replacement.